

REMARKS/ARGUMENTS

The enclosed is responsive to the Examiner's Office Action mailed on July 19, 2006. At the time the Examiner mailed the Office Action claims 1-5, 8-22 and 30-38, were pending. By way of the present response Applicants have: 1) amended claims 1, 9-15, 20-22, and 30-38; and 2) no new claims were added; and 3) no claims were cancelled. As such, claims 1-5, 8-22 and 30-38 are now pending. Applicants respectfully request reconsideration of the present application and allowance of all claims now presented.

Applicants are grateful for the opportunity to discuss the case with the Examiner in a telephone interview held on October 10, 2006. Present at the interview were Examiner Kevin Wyatt, Applicant's representatives James C. Scheller, Jr. (Reg. No. 31,195), and Neal Berezny (Reg. No. 56,030). Discussed in the interview were the 112 rejections of claims 30 and 38, and the Merrill reference relative to the claims. Applicants would appreciate it if the Examiner would call the Applicant's representatives at (408) 962-7563 if there would be any remaining unresolved issues at the time that the Examiner prepares the next Office Action.

Response to Claim Objections

Claims 33 and 38 were objected to due to typographical type errors, which have been removed in the amendment of the claims, rendering the objections moot. Applicant, accordingly, respectfully requests the removal of the objections to claims 33 and 38.

Response to § 112 Rejections

Claims 30 and 38 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. In light of the amendment, the Examiner's rejections have become moot. Nonetheless, the following remarks regarding the Examiner's rejections and the amended claims may be helpful to expedite prosecution.

Claim 30 has been amended to better distinguish between the total length of the “additional bias lines” and the total length of the “main bias lines”. Applicants assert that the 112 rejection of claim 30 has been overcome and requests the removal of the rejection.

Applicant, accordingly, respectfully requests withdrawal of the rejection of claims 30 and 38 under 35 U.S.C. 112 (second paragraph).

Response to § 102 Rejections

Claims 1-2, 4, 9-17, 20-22, and 30-38 are rejected under 35 U.S.C. 102(b) as being anticipated by Merrill (U.S. Publication No. 2002/0036700 A1) hereinafter “*Merrill*”. In light of the amendment, the Examiner’s rejections have become moot. Nonetheless, the following remarks regarding the Examiner’s rejections and the amended claims may be helpful to expedite prosecution.

Claim 1 relates to a photodetecting array comprising: a plurality of detecting cells laid out in an array on a substrate, comprising rows and columns of detecting cells; a plurality of gate lines, wherein each of the gate lines are coupled to a different row of more than two detecting cells; a plurality of data lines, wherein each of the data lines are coupled to a different column of more than two detecting cells; a plurality of main bias voltage lines, wherein **each** of the **main bias voltage lines** are coupled to a **different row** of more than two detecting cells; and a plurality of additional bias voltage lines, wherein **each** of the **additional bias voltage lines** are **coupled** to **two main bias voltage lines in different rows**, wherein the **gate lines** and **main bias voltage lines** are laid out in a plurality of **rows** and the **data lines** and **additional bias voltage lines** are laid out in a plurality of **columns**.

In contrast, Merrill fails to disclose or suggest the layout of a photodetecting array on a substrate, having a plurality of main bias voltage lines, wherein **each** of the **main bias voltage lines** are coupled to a **different row** of **more than two** detecting cells; and a plurality of additional bias voltage lines, wherein **each** of the **additional bias voltage lines** are **coupled** to **two main bias voltage lines in different rows**, wherein the **gate lines** and **main bias voltage lines** are laid out in a plurality of **rows** and the **data lines** and **additional bias voltage lines** are laid out in a plurality of **columns**. Referring to figure 8 in Merrill, it was asserted that the PIX-VCC line 334, which has horizontal extensions may represent the **main bias** lines of the array. However, the claim, as amended, requires that **each** main bias line is coupled to a **different row** of **more than two** detecting cells. In this interpretation of Merrill, fig. 8 would disclose three main bias lines. The top main bias line would be connected to just one cell, the middle main bias line would be connected to two cells in a **column**, and the bottom main bias line would only couple to one cell. Clearly, **each** of the alleged main bias lines do not couple to **different rows** of **more than two** detecting cells, nor is it an **inherent** property of figure 8 that the alleged main bias lines couple to more than two cells. It is unclear how such a configuration would even be possible without making significant changes to the disclosure in Merrill. MPEP 2112 (IV) requires that the Examiner must provide rationale or evidence tending to show inherency. “To establish inherency, the extrinsic evidence must make clear that the missing descriptive matter is **necessarily present** in the thing described in the reference.” *In re Robertson*, 169 F.3d 743, 745, 49 USPQ2d 1949, 1950-51 (Fed. Cir. 1999). Applicants assert that it is not necessarily present in Merrill that the main bias lines inherently couple to more than two detecting cells.

Further, Merrill has failed to recognize the advantage of reducing the **coupling capacitance** between the **main bias line** and the **data line**, by forming a photodetecting array wherein the bias line and the data line are predominantly **perpendicular** to each other, **instead of**

parallel. Further, Merrill has failed to recognized the advantage of providing additional bias voltage lines that couple pairs of main bias lines, thus substantially reducing the resistance of the main bias lines, which reduces the RC time constants associated with the main bias lines.

In addition, figure 8 in Merrill merely discloses schematics, which are designed to identify coupling relationships between electrical components, but is generally not intended to provide an actual **physical layout** of the structure, and thus cannot be relied upon in a rejection. Claim 2 in Merrill was provided as evidence that Merrill intended to provide the device on a substrate. The issue is not whether the device is on a substrate, but rather that there is a distinction between a physical layout of a device and a schematic of a device. In a schematic, lines are drawn to indicate the connection of two components, but location of the components and the pathways of the connectors are arbitrary, and not intended to disclose the actual physical layout of the components and connections. In contrast, a physical layout indicates the actual physical location of the components and the pathways of the electrical lines. The pathways in a physical layout are not arbitrary because the resistance and capacitive coupling of the lines change depending on the location of the pathways. Merrill appears to disclose connections to components, but fails to disclose or suggest the actual physical location of the connections to the components.

In view of the above remarks, a specific discussion of the dependent claims is considered to be unnecessary. Therefore, Applicants' silence regarding any dependent claim is not to be interpreted as agreement with, or acquiescence to, the rejection of such claim or as waiving any argument regarding that claim. Nonetheless, the following remarks regarding the Examiner's rejections and the amended claims may be helpful to expedite prosecution.

Merrill's Figure 3 fails to disclose or suggest that the transistor is coupled to the gate line by a first pathway and to the data line by a second pathway, and wherein the photodiode is coupled to the transistor by a third pathway and to the main bias voltage line by a fourth pathway, wherein the first, second, third, and fourth pathways are all **distinct and separate** from each other. In contrast, Merrill fails to disclose or suggest that the photodiode is coupled to the gate line and the data line, and that the photodiode is coupled to the transistor and the data line by **distinct and separate** pathways. In fact, Merrill teaches away from the invention by disclosing that the transistor is coupled to ground.

Applicant, accordingly, respectfully requests withdrawal of the rejection of claims 1-2, 4, 9-17, 20-22, and 30-38 under 35 U.S.C. 102(b) as being anticipated by Merrill (U.S. Publication No. 2002/0036700 A1)

Response to § 103 Rejections

Claims 3, 5, 8, 18-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over *Merrill* in view of Applicant's Admitted Prior Art (in Fig 1). In light of the amendment, the Examiner's rejections have become moot. Nonetheless, the following remarks regarding the Examiner's rejections and the amended claims may be helpful to expedite prosecution.

Applicant's alleged admitted prior art (AAPA) is introduced to provide the elements related to the material structure of the photodiode and that the photodiode is positioned over the transistor. However, AAPA fails to remedy the deficiencies of Merrill and in fact teaches away from the invention because AAPA discloses that the bias line and the data line are parallel, and therefore would have a high coupling capacitance. MPEP 2143.01 requires that the prior art must suggest the desirability of the claimed invention. "The mere fact that references can be combined or modified does not render the resultant combination obvious unless the prior art also suggests

suggests the desirability of the combination. *In re Mills*, 916 F.2d 680, 16 USPQ2d 1430 (Fed. Cir. 1990). Further, the proposed modification cannot render the prior art unsatisfactory for its intended purpose. MPEP 2143.01.

In view of the above remarks, a specific discussion of the dependent claims is considered to be unnecessary. Therefore, Applicants' silence regarding any dependent claim is not to be interpreted as agreement with, or acquiescence to, the rejection of such claim or as waiving any argument regarding that claim.

Applicant, accordingly, respectfully requests withdrawal of the rejection of claims 3, 5, 8, 18-19 under 35 U.S.C. 103(a) as being unpatentable over *Merrill* in view of Applicant's Admitted Prior Art (in Fig 1).

Conclusion

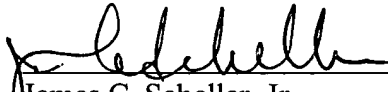
Applicant respectfully submits that the present application is in condition for allowance. If the Examiner believes a telephone conference would expedite or assist in the allowance of the present application, the Examiner is invited to call James C. Scheller at (408) 720-8300.

Pursuant to 37 C.F.R. 1.136(a)(3), applicant(s) hereby request and authorize the U.S. Patent and Trademark Office to (1) treat any concurrent or future reply that requires a petition for extension of time as incorporating a petition for extension of time for the appropriate length of time and (2) charge all required fees, including extension of time fees and fees under 37 C.F.R. 1.16 and 1.17, to Deposit Account No. 02-2666.

Respectfully submitted,

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